

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) Method to produce a solar cell wherein on a substrate a dissolvable intermediate layer is deposited, on the intermediate layer a layer structure is deposited, the intermediate layer is dissolved subsequently, which separates the layer structure from the substrate, and thereby from the layer structure a flexible solar cell is formed, wherein said solar cell has an absorber layer consisting of a material of the group of I-III-VI compounds of the periodic system or a material of the group of II-VI compounds of the periodic system.
2. (Previously Presented) Method according to claim 1 wherein the layer structure is formed by a supporting layer and a layer stack.
3. (Previously Presented) Method according to claim 1 wherein the layer structure is formed by a layer stack and that after dissolution of the intermediate layer the layer stack is provided with a supporting layer.
4. (Previously Presented) Method according to claim 1 wherein after dissolution of the intermediate layer the substrate is reused.

5. (Currently Amended) Method according to claim 1 wherein the intermediate layer consists of a material of the group of the alkali-halogenides like NaCl, KCl, NaF or a material of the group of the IIa-fluorides like BaF₂, whereby said solar cell is improving efficiency by diffusion of alkali ion through the supporting layer so that the alkali ion is incorporated in the II-VI and I-III-VI compounds during growth.

6. (Previously Presented) Method according to claim 1 wherein several combinations of layer stacks with or without separating layers between the layer stacks are deposited one upon the other.

7. (Currently Amended) Application of the method according to claim 1 to produce energy on earth and in space and for consumer applications ~~like pocket calculators and "smart cards".~~

8. (Previously Presented) Solar cell according to claim 1 consisting of at least one absorber layer of a semiconductor, of at least one window layer of a semiconductor to couple the light in, of at least one at least partially transparent front contact and at least one backcontact, wherein the solar cell contains at least one thin supporting layer and that this supporting layer adjoins to the back contact or is located on the front contact.

9. (Currently Amended) Solar cell according to claim 8 wherein the supporting layer consists of a plastic, ~~preferably a polyimide,~~ or of a metal or ceramic, and that its thickness is 1 - 100 μm , ~~preferably 20 μm .~~

10. (Canceled)

11. (Previously Presented) Solar cell according to claim 8 wherein the window layer consists of a semiconductor material with a band gap which is at least as large as that of the absorber layer, and where the structure of the layers is polycrystalline or amorphous.

12. (Previously Presented) Solar cell according to claim 8 wherein the absorber layer consists of $\text{CuIn}_x\text{Ga}_y\text{S}_z\text{Se}_u$ with $x, y, z, u \geq 0$ and the window layer contains at least one material of the group of doped or undoped ZnO, InSnO (ITO), CdS and ZnSe.

13. (Currently Amended) Solar cell according to claim 8 wherein the flexible solar cell structure, depending on application, contains a rigid supporting material like glass, metal or ceramic.

14. (New) Method according to claim 1 wherein the material of the group of I-III-VI compounds of the periodic system is CuIn_xSe_y , $\text{CuIn}_x\text{Ga}_y\text{Se}_z$, or $\text{CuIn}_x\text{Ga}_y\text{S}_z\text{Se}_u$, with $x, y, z, u \geq 0$.

15. (New) Method according to claim 1 wherein the material of the group of II-VI compounds of the periodic system is CdTe.

16. (New) Method according to claim 5 wherein the material of the group of the alkali-halogenides is NaCl or NaF.
17. (New) Method according to claim 5 wherein the material of the group of the IIa-fluorides is BaF₂.
18. (New) Application of the method according to claim 7 wherein consumer applications include pocket calculators or smart cards.
19. (New) Solar cell according to claim 9 wherein the plastic is a polyimide.
20. (New) Solar cell according to claim 9 wherein the thickness is 20 μm .
21. (New) Solar cell according to claim 13 wherein the rigid supporting material is glass, metal or ceramic.